PIONEER®

Service Manual

ORDER NO.
CRT 1054

POWER BOOSTER AMPLIFIER

BP-41 EW

SPECIFICATIONS

Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	4 A
Dimensions	150(W) × 25(H) × 150(D) mm
Weight	0.7 kg

Maximum power output	30 W + 30 W (EIAJ)
Continuous power output	17 W + 17 W (1% dist. at 1 kHz)
Load impedance	4 Ω (4 — 8 Ω allowable)
Frequency response	20 — 50,000 Hz (±3 dB)
Signal-to-noise ratio	93 dB (IEC-A network, at 1 W)
Distortion	0.02% (at 10 W, 1 kHz)
Input level	3 — 30 V/120 Ω

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

CONTENTS

1. CONNECTION 1
2. DISASSEMBLY 2
3. CIRCUIT DESCRIPTION 3
4. SCHEMATIC CIRCUIT DIAGRAM 4
5. CONNECTION DIAGRAM 6
6. EXPLODED VIEW 8
7. ELECTRICAL PARTS LIST 10

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A. TEL: (213) 420-5700
PIONEER ELECTRONIC (EUROPE) N.V. Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775·28·08
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: (03) 580-9911

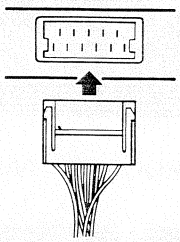
FK © JULY 1986 Printed in Japan

BP-41

1. CONNECTION

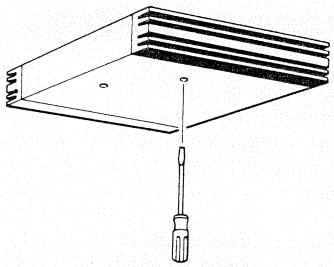
- Before making final connections, make temporary connections then operate the unit to check for any connecting cord problems.
- Speakers connected to this unit must be high power type with over 30W maximum input power and have impedance between 4 and 8 ohms. Be aware of the fact that using a speaker other than the one specified can cause the speaker to be damaged.
- A special BPTL circuit is used to be sure that you do not connect the speaker directly to ground nor join the left and right speaker (—) leads.
- Different speaker leads have are offered for different car models. The ground wire cannot be used for the left or right speakers lead. Be sure to use the speaker lead only.
- When connecting the cords, be sure to fix them firmly with clamps or tape. Be sure to protect the cords from damage by taping them at places where they will contact barriers.
- Keep the cord away from high temperature places such as the heater outlet.
- To ensure that all regular car stereos used in combination with this unit operate properly, be sure to wire the main power supply cable (red) correctly to the respectively determined points. Failure to do so or errors in this process will result in total inoperation.
- Be sure to properly connect the color coded leads. Failure to do so can cause malfunctions.
- Use a regular power car stereo with a maximum output of 8.5W + 8.5 W or less.

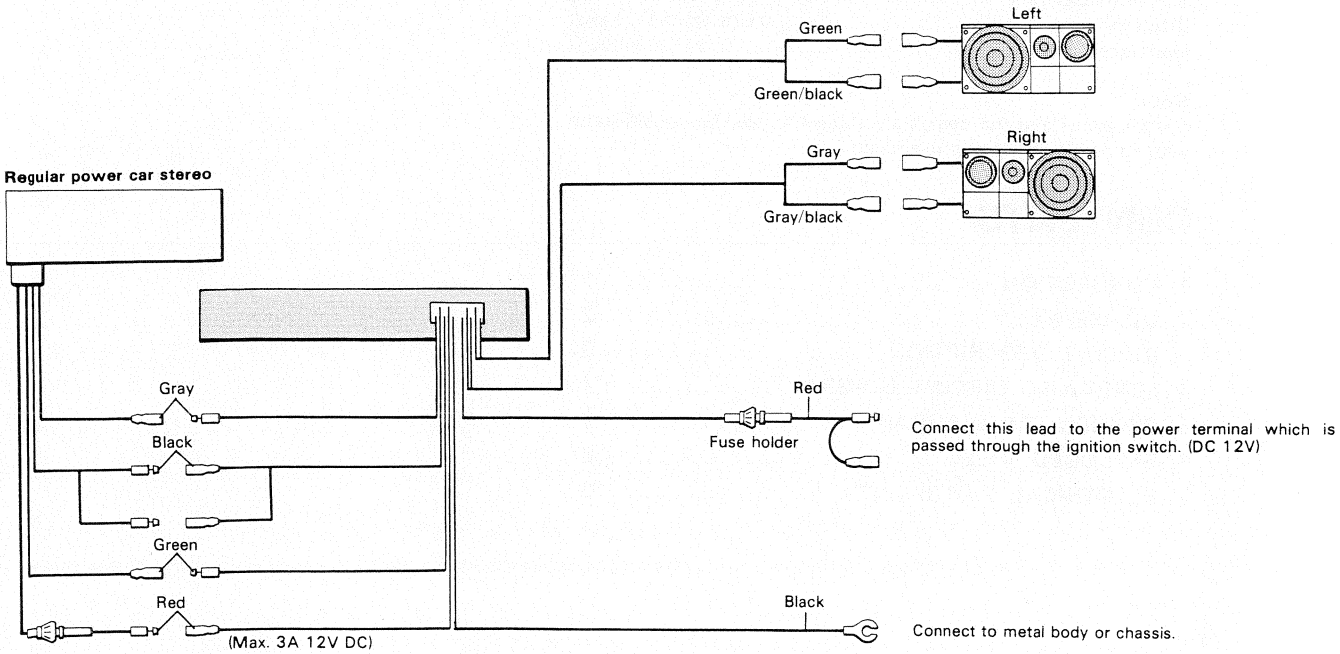
Connections of Cords (Supplied) for Wiring



Gain Control

When gain adjustment is required, peel off the label on the bottom of the unit and make adjustments with a minus screwdriver.





2. DISASSEMBLY

- **Removing the Case and the Chassis**

1. Remove the five screws A and remove the case and the chassis.

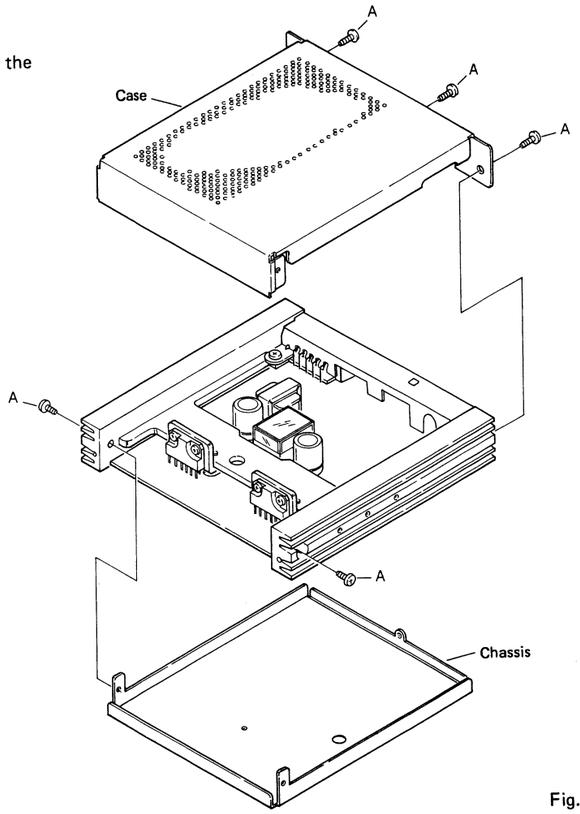


Fig. 1

- **Removing the Heat Sink**

1. Remove the two screws C and the four screws D.
2. Remove the heat sink.

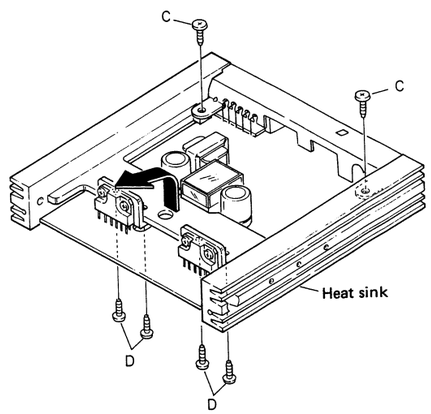


Fig. 2

3. CIRCUIT DESCRIPTION

- **Muting Operation**

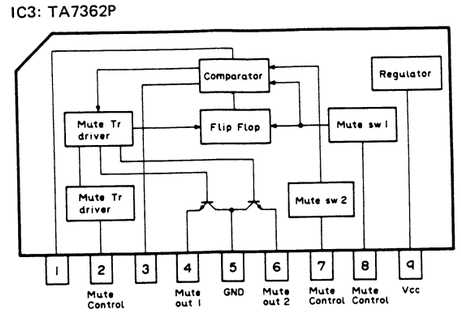
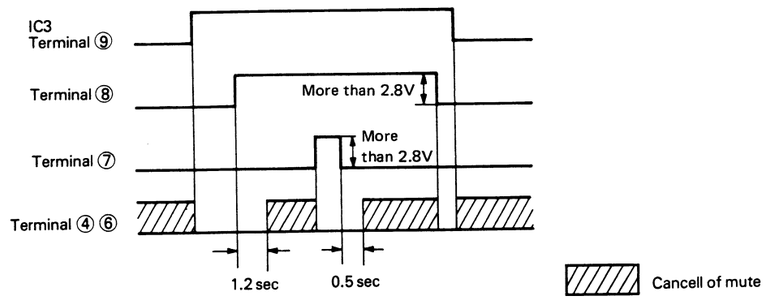


Fig. 3



(Timing of muting operation)

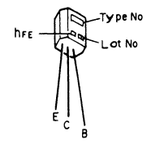
Fig. 4

- **Refer to figure 4 while reading the following description.**

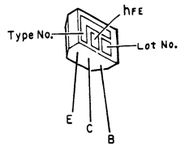
1. When + B is supplied to the TO BATTERY terminal, a voltage is applied to terminal ⑨ of IC3, the muting transistor inside the IC is turned on and muting is activated.
2. When power is turned on to the external set, + B is supplied to pin ① of the connector. Muting is cancelled 1.2 seconds after the voltage at terminal ⑧ of IC3 reaches 2.8V or more.
3. When a muting output is generated in the external set, a voltage is applied from pin ④ of the connector to terminal ⑦ of IC3 and muting is activated when this voltage reaches 2.8V or more. Muting is cancelled 0.5 seconds after the voltage drops below 2.8V.
4. The muting restoration time is determined by the discharge time of the capacitor placed between terminals ① and ③ of IC3.

4. SCHEMATIC CIRCUIT DIAGRAM

2SA1048
2SC1740SLN

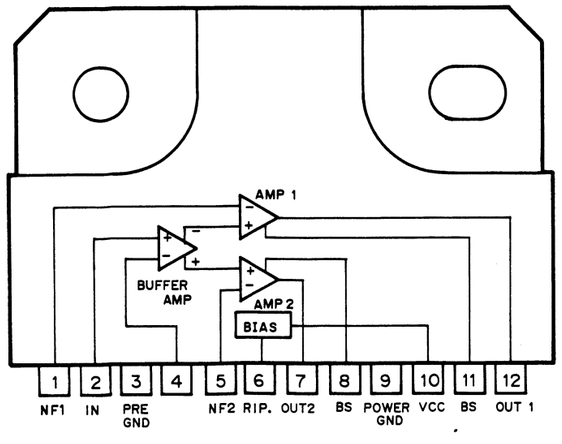


2SA933S



TA7362P (Shown in Fig. 3)

TA7250BP



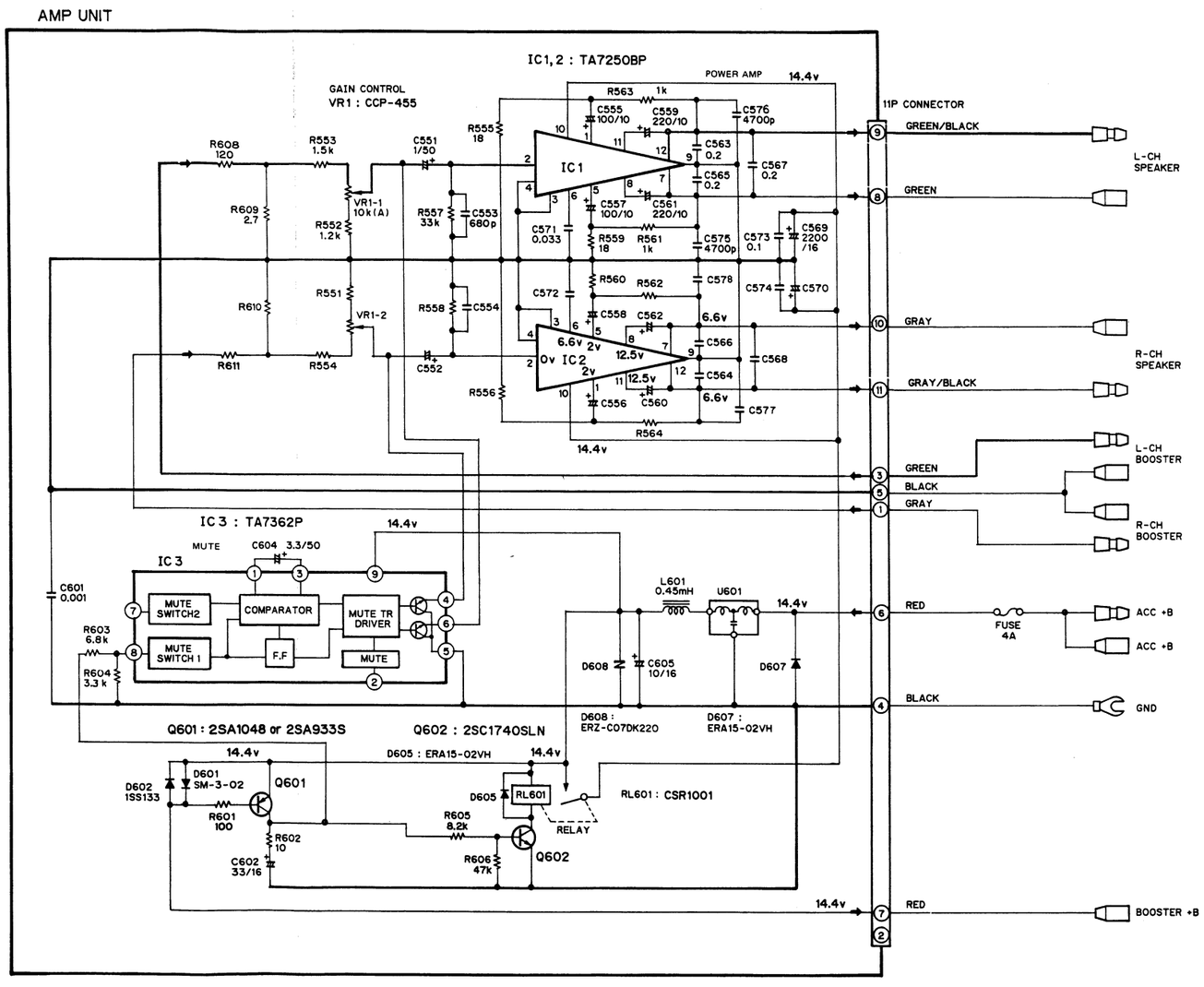
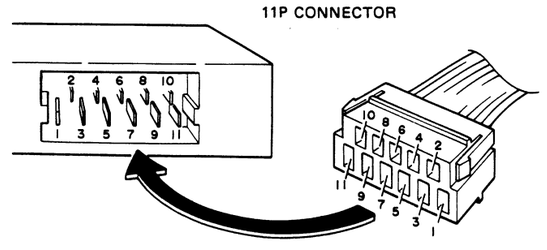


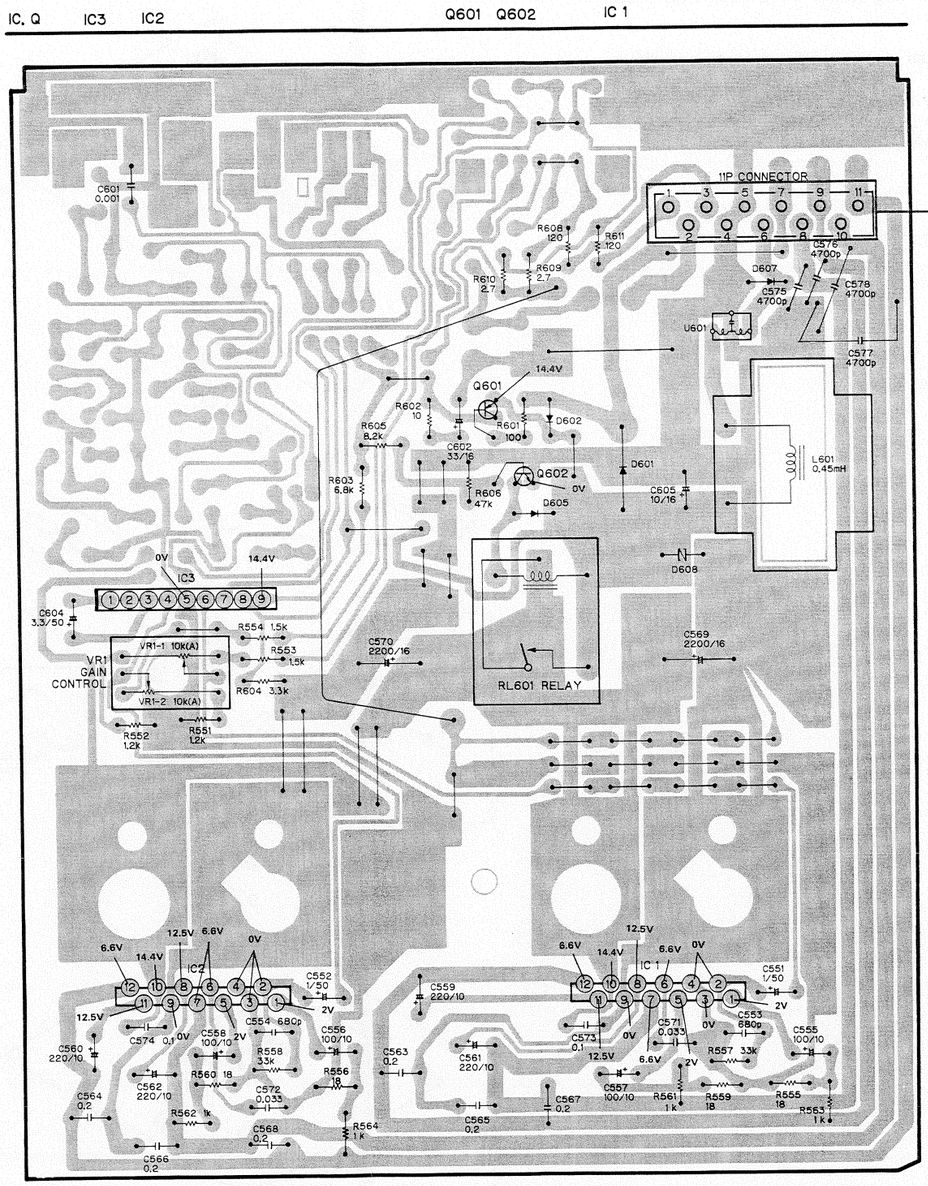
Fig. 5

Pin	I/O	Function	Pin	I/O	Function
1	Input	Rch Booster	7	Output	Booster +B
2			8	Output	Lch Speaker
3	Input	Lch Booster	9	Output	Lch Speaker
4		GND	10	Output	Rch Speaker
5		GND (Booster)	11	Output	Rch Speaker
6	Input	ACC +B			



5. CONNECTION DIAGRAM

AMP UNIT



IC1, 2 : TA7250BP IC3 : TA7362P Q601 : 2SA1048 or 2SA933S Q602 : 2SC1740SLN
D601 : SM-3-02 D602 : 1SS133 D605, 607 : ERA15-02VH D608 : ERZ-C07DK220

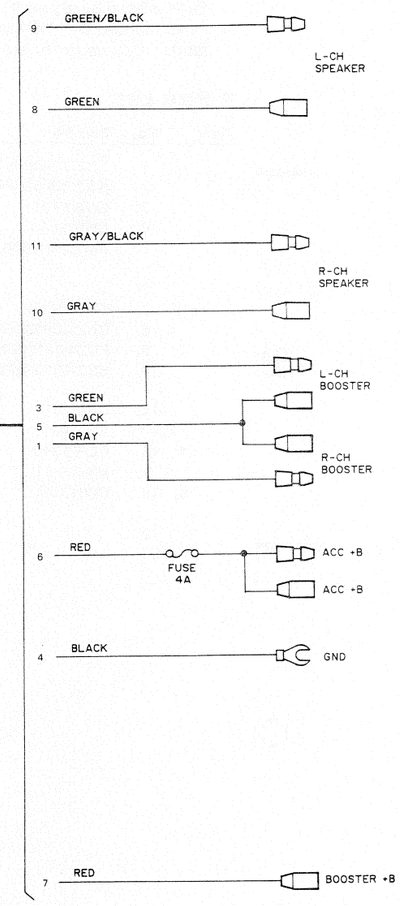


Fig. 6

6. EXPLODED VIEW

NOTE:

- *For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

● Parts List

Mark	No.	Part No.	Description
	1.	BBZ30P080FBN	Screw
	2.	BBZ26P080FBN	Screw
	3.	CNB1101	Case
	4.	CNR1040	Heat Sink
	5.	BMZ26P160FZK	Screw
	6.		Heat Sink Assy
★★	7.	TA7250BP	IC
	8.	BBZ26P080FMC	Screw
	9.	PBZ40P120FMC	Screw
	10.	BBZ40P080FMC	Screw
	11.	CKX-011	Jack Plate
	12–15.	VACANT	
★	16.	CDE1340	Cord Assy
	17.	VACANT	
◉	18.	CWH1030	Amp Unit
	19.		Insulator
	20.		Chassis

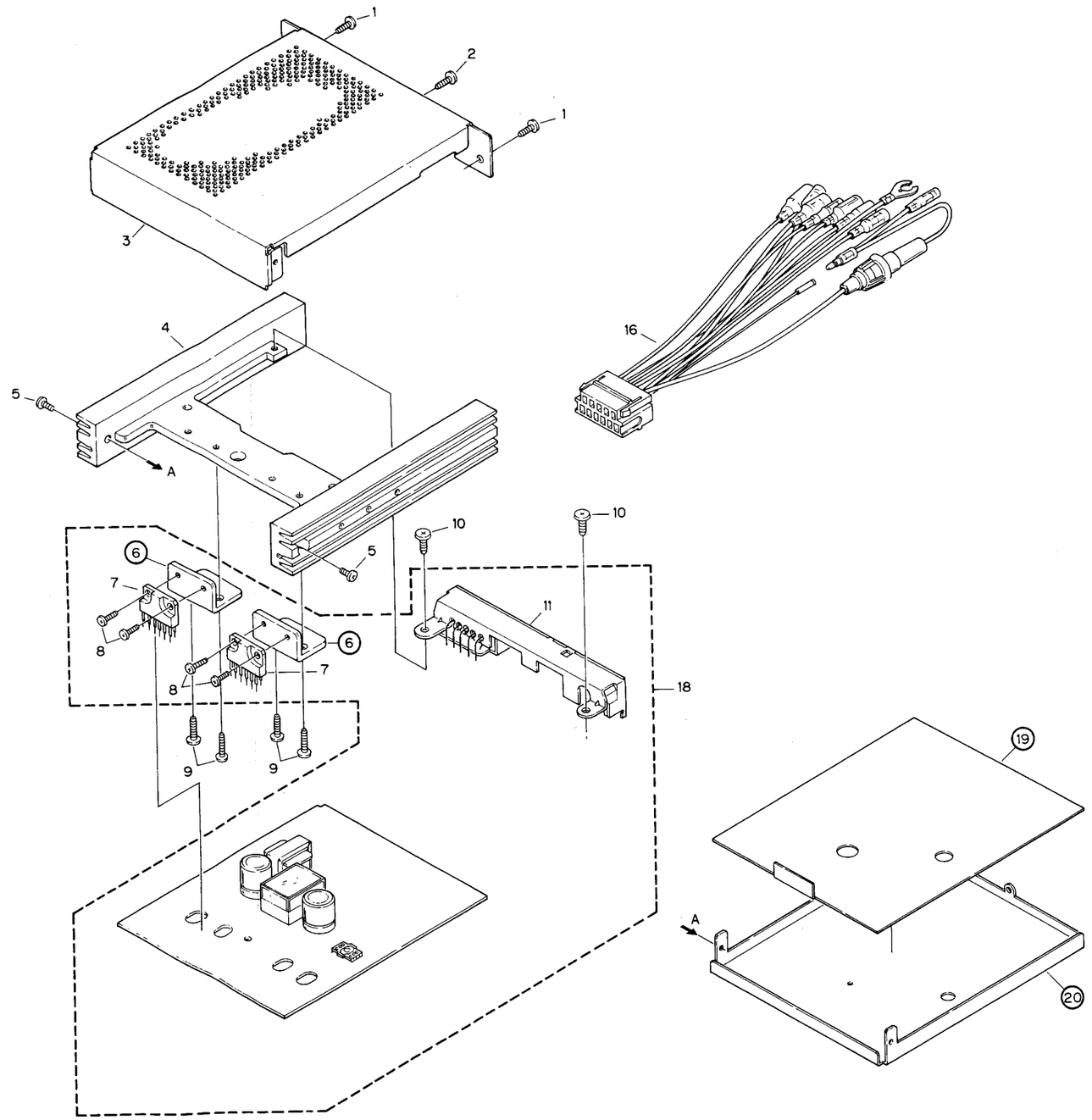


Fig. 7

7. ELECTRICAL PARTS LIST

NOTE:
When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*RN1/4SR 5 6 2 1 F*	

- *For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*
  Chip Resistor
  RS1/8S □□□J
  Chip Capacitor (except for CQS.....)
  CKS....., CCS.....

Amp Unit

MISCELLANEOUS

Mark	Symbol & Description		Part No.
★★	IC1, 2		TA7250BP
★★	IC3		TA7362P
★★	Q601		2SA1048 or 2SA933S
★★	Q602		2SC1740SLN
★	D601		SM-3-02
★	D602		1SS133
★	D605, 607		ERA15-02VH
★	D608		ERZ-C07DK220
	L601	Choke Transformer, 0.45mH	CTH1001
	U601		CCG-081
★★	VR1	Semi-fixed, 10kΩ (B)	CCP-455
	RL601	Relay	CSR1001

CAPACITORS

Mark	Symbol & Description		Part No.
	C551, 552		CEA010M50L2
	C553, 554		CKDYB681K50
	C555–558		CEA101M10L2
	C559–562		CEA221M10L2
	C563–568		CKDBC204M12
	C569, 570	2200μF/16V	CCH-123
	C571, 572		CQMA333K50
	C573, 574		CKDBC104K25
	C575–578		CKDYB472K50L
	C601		CKDYB102K50
	C602		CEA330M16L2
	C604		CEA3R3M50L2
	C605		CEA100M16L2

RESISTORS

Mark	Symbol & Description	Part No.
	R551–564, 601–606, 608–611	RD¼PS□□□JL

8. PACKING METHOD

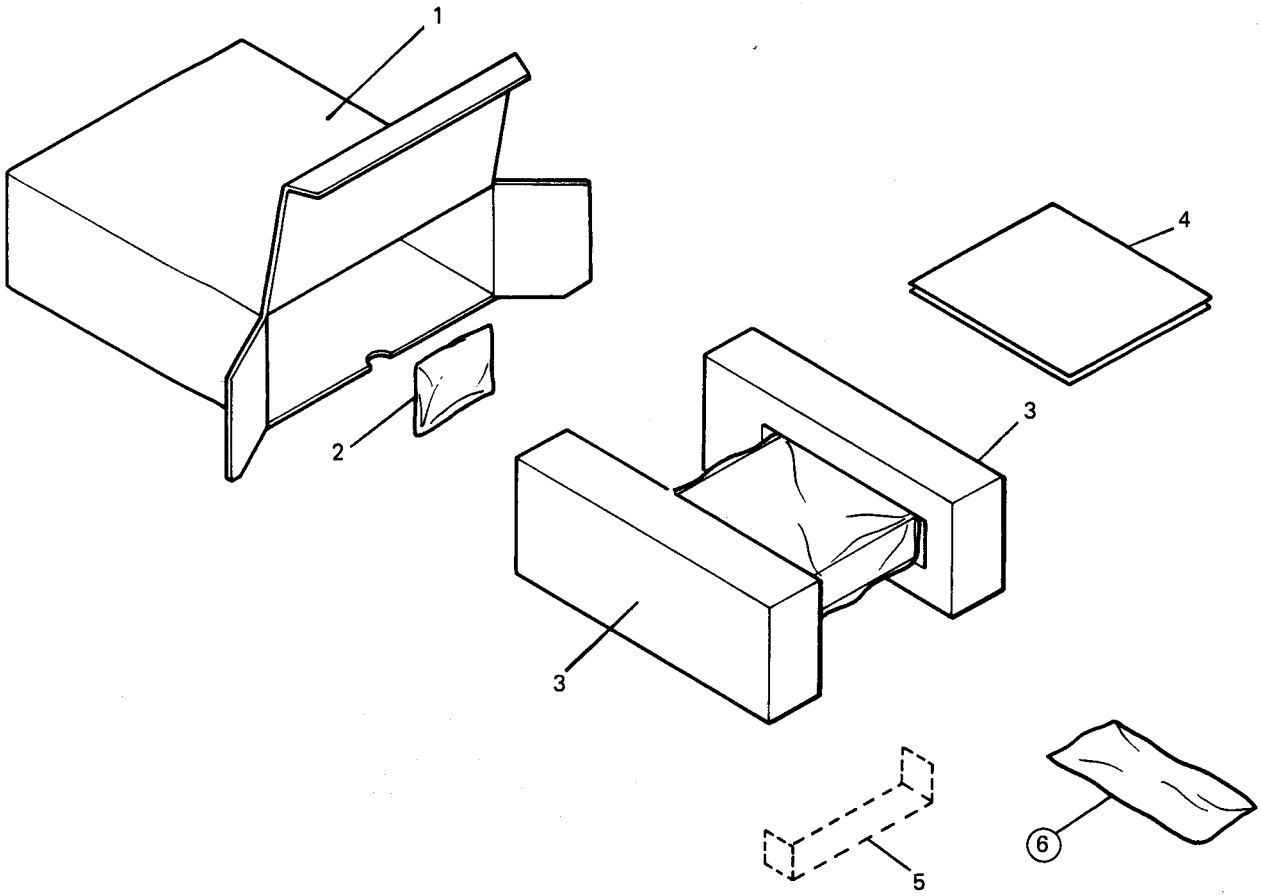


Fig. 8

• Parts List

Mark	No.	Part No.	Description
	1.	CHG1142	Carton
	2.	CDE1340	Cord Assy
	3.	CHB-999	Styrofoam (1 set pair)
	4.	CRD1078	Owner's Manual
			Card
	5.	CNB-783	Mounting Bracket
	6.		Accessory Kit
	6-1.	CEA-825	Accessory Assy
	6-1-1.	BNC50P160FMC	Screw
	6-1-2.	B20-223-F	Split Pin
	6-1-3.	B70-056-A	Nut
	6-1-4.	CBA-149	Screw
	6-1-5.	PMB50P160FMC	Screw
	6-1-6.	WA45F130M080	Washer
	6-2.	CNM-667	Fastener